

REMARKS

Claims 1-26, 28 and new claims 29-38 are pending in the case. Claim 27 is canceled. A helpful interview was held November 15, 2005, among one of the inventors, Steven Danyluk, the representative, Michael Rehtin, and Examiner Larkin. At this interview all claims were reviewed with Mr. Larkin, and per the request of Mr. Larkin enclosed is a copy of the Power Point slide presentation made by the inventor, Steven Danyluk. This presentation was used to review the underlying science and is not intended as a limitation of any claims pending. In addition, all the applied prior art was reviewed in detail as it relates to the claims and agreement was reached based on the proposed amendment of the claims and differences over the current prior art references. The Office Action was used as the agenda and all sections were sequentially considered.

In the Office Action, paragraph 1, claims 11, 14, 15, 23, 25 and 27 (now canceled) were objected to because the word "Claim" should be corrected to be - - claim - - to be consistent with original claims 1-10. This has been done by this Amendment.

In paragraphs 2 and 3, claims 13-15 and 24-28 were rejected under 35 USC 112, first paragraph. In particular, claims 13, 24, 26 and 28 recite measuring chemical properties of a sample and the Examiner could not locate support for this feature. This aspect of the invention can be found by reference to original U.S. Patent 5,974,869 at the following example locations: col. 1, ll. 43-49; col. 2, ll. 28-31 and 64-66; col. 5, ll. 1-8 and 27-34 and col. 6, ll. 27-43.

Therefore, it is believe this rejection is overcome.

In paragraph 5, claims 1-10, 13-23, 26 and 27 (now canceled) were rejected under 35 USC 112, second paragraph. In particular, the Examiner required connection of the preamble of monitoring certain properties of the component or sample to the measurement of contact potential difference between the probe and component. Suggested changes to the claims were discussed at the interview and were agreed upon. The appropriate amendment has thus been made to claims 1, 8, 13, 16, 22 and 26 and also included in all new claims. It is therefore believed that this rejection has been overcome.

In paragraphs 6 and 7, claim 11 was rejected as anticipated under 35 USC 102(b) by Stratmann et al. (5,369,370). Claim 11 has been amended to include the feature of a non-vibrating probe wherein Stratmann teaches a vibrating Kelvin probe. In addition, claim 11 includes the feature of “measuring a currently directly related to a temporal variation of a contact potential difference between the sample and the sensor.” Consequently, it is believed that this rejection is overcome.

In paragraph 8, claims 11 and 12 were rejected under 35 USC 102(b) as anticipated by Wilson (4,973,910). As recited above, claim 11 has been amended to include a current related to a temporal variation of a contact potential difference between the sample and the sensor. Wilson is directed to a semiconductor device circuit which is established between a probe and a sample and includes generating a bias voltage to stabilize the semiconductor circuit. Wilson thus teaches measuring a contact potential difference by use of a single static measurement, not from a temporal variation of a contact potential difference. Wilson does not teach or disclose any motion requirement, and in fact if you did move the Wilson probe, the best that could happen is

that the semiconductor circuit would remain stable, measuring only the static value of contact potential difference. However it is much more likely that if the device were moved in Wilson, the circuit would be out of balance and not measure the contact potential difference until the circuit was rebiased and stabilized. Further, in view of the lack of any teaching or suggestion of motion to measure contact potential difference and rather actually teaches the need for establishing a static circuit, it is believed the rejection based on Wilson is overcome.

In paragraphs 9 and 10, claim 13 was rejected as obvious over Wilson (4,973,910). Once again, as for claim 11, it is believed that the amendments to claim 13 overcome this rejection by including a structure which scans the probe relative to the component to measure a temporal variation in a property relatable to the work function.

In paragraph 11, claims 11-15, 22 and 23 were rejected as being obvious over Hansen (5,136,249). Hansen is directed to an electrolytic cell to measure work function, and Hansen does not teach, disclose or even suggest a device which measures contact potential difference through a temporal variation. This temporal variation features gives rise to a current which can then be related to at least one of compositional change, tribological wear and change of distance between the probe and the sample or dimensions of sample features. Hansen in fact requires equilibration of an electrolytic cell with characterization measurements first of a reference electrode; and motion of any of these structures is not germane to the method used by Hansen, nor does Hansen suggest any such motion. Therefore, it is believed the claim amendments and our explanation distinguish over Hansen.

In paragraph 12, claims 1, 5, 7, 16, 20, 26 and 28 were rejected as being obvious over Hansen in view of Stratmann. As described in great detail hereinbefore, all the above-recited claims include a feature of a device or method for measuring temporal variation of contact potential difference through lateral motion of the probe relative to the sample or component (not vibration as in a Kelvin probe). Neither Hansen nor Stratmann teach any such structure or method step in combination with a non-vibrating probe. Consequently, it is believed this rejection is overcome.

In paragraph 13, the Examiner indicated that certain claims 2-4, 6, 8-10, 17-19, 21, 24, 26 and 27 (now canceled) were not rejected over the prior art. This is appreciated by the Applicant, but it is believed the amendments herein have overcome all the rejections placing all claims in condition for allowance.

New claims 29-38 have been added and the substance of these claims were also discussed at the interview on November 15, 2005. These claims include variations of the features of (a) a structure and method for the measurement of a temporal variation in a property of the material relatable to the component or sample work function or contact potential difference, (b) a structure or method for measuring the work function or contact potential difference by scanning laterally a sensor and component along a line (see FIGS. 5 and 7(b)), along a series of points or covering a spatial range (see FIGS. 3(a) and 3(b)), and also (c) a structure and method for associating the contact potential difference or the related work functions from lateral scanning to at least one of chemical features, spatial geometry, tribological wear and quantitative measure of dimensions of

a sample (see col. 6, ll. 57-61) along a line as the sample. In view of these distinctions over the prior art of record, it is believed claims 29-38 are also in condition for allowance.

If any questions arise about any of the above amendments and clarifications, the Examiner is invited to call the undersigned representative. In view of these amendments and explanations, it is believed a Notice of Allowance of claims 1-26 and claims 28-38 is now in order and is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 06-1450. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 06-1450. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 06-1450.

Respectfully submitted,

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